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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,392	06/30/2003	Jing Xiang	120-038	1535
34845 7590 09/13/2007 McGUINNESS & MANARAS LLP 125 NAGOG PARK ACTON, MA 01720			EXAMINER PATEL, CHANDRAHAS B	
			ART UNIT 2616	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/611,392

Applicant(s)

XIANG, JING

Examiner

Chandrabas Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/19/2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Examiner is grateful to applicant for correcting informalities with drawings, hence withdraws to objection to drawings.

Examiner is grateful to applicant for putting period at the end of claim 1, hence withdraws objection to claim 1.

Examiner is grateful to applicant for correcting antecedent issues with claims 3, 4, 12, 14-17, hence withdraws 35 U.S.C. 112 rejection to above claims.

Amendments made to claims necessitated finality of this rejection.

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 10, 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Koo et al. (USPN 7,161,924).

Regarding claim 1, Koo teaches a method of assigning sequence numbers to packets for transmission over a network [Fig. 9, 11] comprising the steps of: identifying a quality of service level associated with a packet, wherein the service level is selected from a set of at least two service levels available for packets in the network [Col. 3, lines 36-41, Voice service, Data service, Video service each had different QoS requirement]; responsive to the quality of service level associated with the packet, assigning a sequence number to the packet, wherein the sequence number is related to a sequence number of a previously transmitted packet of the same quality of service level [Fig. 9, 11, for each logical channel sequence numbers are assigned

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depending on previously transmitted packet where logical channel corresponds to different QoS as described in Col. 3, lines 36-41]; and forwarding the packet over the network [Col. 3, lines 53-56].

Regarding claim 10, The recitation that IPSec Tunnel has not been given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951).

Regarding claim 10, Koo teaches an apparatus for assigning sequence numbers at the sending node of IPSec tunnel [Fig. 9, 11], comprising: a sequence number table, each entry associated with a quality of service level and storing a number representing the last sequence number for that quality of service level [Fig. 9, 11-1, 11-2, Col. 3, lines 36-41, Voice service, Data service, Video service each had different QoS requirement]; and means for assigning a sequence number to a packet to be transmitted based on the of service level of the packet [Fig. 9, 11-1, 11-2, for each logical channel sequence numbers are assigned depending on previously transmitted packet where logical channel corresponds to different QoS as described in Col. 3, lines 36-41].

Regarding claim 11, Koo teaches retrieving a last sequence number for that quality of service level from the sequence number table and increment the last sequence number to provide a new sequence number to assign to the packet [Fig. 9, 11-1 has SN 1-1, 1-2, 1-3, 11-2 has SN 2-1, 2-2, 2-3...].

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3. Claims 2, 3, 13, 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kitchin (USPN 7,260,392).

Regarding claim 2, Kitchin teaches a method for determining whether to discard a received packet at a node [Col. 3, lines 10-38] the method including the steps of: comparing a sequence number associated with the received packet against sequence numbers associated with a selected number of previously received packets, wherein the received packet has a quality of service level associated therewith, and wherein the selected number of previously received packets are of the same quality of service level as the received packet [Col. 3, lines 20-28, Col. 4, lines 32-39]; and discarding the received packet in the event of a match between any one of the sequence numbers associated with the selected number of previously received packets having the same quality of service level as the received packet and the sequence number associated with the received packet [Col. 3, lines 20-28, Col. 4, lines 32-46].

Regarding claim 3, Kitchin teaches forwarding the received packet for processing in the event that there is no match between any one of the sequence numbers associated with the selected number of previously received packets having the same quality of service as the received packet and the sequence number of the received packet [Col. 4, lines 40-46].

Regarding claim 13, Kitchin teaches an apparatus for discarding redundant packets received at a receiving node [Col. 3, lines 10-38], comprising: a sequence number buffer, for storing sequence numbers associated with packets received at the receiving node, wherein a packet is assigned a sequence number responsive to a quality of service level of the packet and a sequence number of a prior packet having the quality of service level of the packet [Col. 3, lines 20-28, Col. 4, lines 32-39]; an anti-replay bitmask table, each entry associated with a different

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quality of service level and storing the bitmask of sequence numbers of previously received packets to be compared in determining whether to discard a received packet [Col. 3, lines 20-28, Col. 4, lines 32-46].

Regarding claim 18, Kitchin teaches an apparatus comprising: means for receiving a plurality packets having an associated plurality of sequence numbers, wherein each one of the packets in the plurality of packets has a quality of service level associated therewith, and wherein there are at least two types of service levels [Col. 3, lines 20-28, Col. 4, lines 32-46, the **reference states delivering packets to another class indicates there are at least two service levels**]; means for comparing, for each received packet, a received sequence number of each received packet against a set of previously received sequence numbers, wherein the set of sequence numbers includes only sequence numbers of packets previously received within a window and having a quality of service level type corresponding to the quality of service level type of the received packet [Col. 3, lines 20-28, Col. 4, lines 32-46]; and means for discarding the received packet in the event of a match between the received sequence number and any of the sequence numbers in the set of sequence numbers [Col. 3, lines 20-28].

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitchin (USPN 7,260,392) in view of Nagarajan et al. (USPN 7,099,327, Herein as Nagarajan).

Regarding claim 4, Kitchin teaches a method as discussed in rejection of claim 2.

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However, Kitchin does not teach forwarding the received packet for processing if the packet is received a predetermined time after the selected number of previously received packets.

Nagarajan teaches forwarding the received packet for processing if the packet is received a predetermined time after the selected number of previously received packets [Col. 6, lines 35-46].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to forward the received packets for processing after a selected number of previous packets are received since sequence numbers are allocated using a finite number of bits so they will be repeated after a maximum finite value therefore it must be decided after which sequence number should you stop processing them [Col. 6, lines 32-35].

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over by Koo et al. (USPN 7,161,924) in view of Zdan (USPN 7,020,143).

Regarding claim 5, Koo teaches a method as discussed in rejection of claim 1.

However, Koo does not teach determining service level in response to a differentiated services codepoint (DSCP) associated with the packet.

Zdan teaches determining service level in response to a DSCP associated with the packet [Col. 5, lines 46-57].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to determine service level in response to DSCP associated with the packet so that QoS can be implemented without the need for per-flow signaling and state maintenance in each traversed node [Col. 5, lines 53-57].

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over by Koo et al. (USPN 7,161,924) in view of Koodli et al. (USPN 7,000,120, Herein as Koodli).

Regarding claim 6, Koo teaches a method as discussed in rejection of claim 1.

However, Koo does not teach there are at least two service levels and the sequence number corresponding to a higher priority service level is separate from the sequence number corresponding to a lower priority service level.

Koodli teaches there are at least two service levels and the sequence number corresponding to a higher priority service level is separate from the sequence number corresponding to a lower priority service level **[Fig. 4A, 403 are the 1st two bits of sequence number depending on type of protocol which would make sequence number of each priority level different since 1st two bits are different]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have different sequence corresponding to different priority service level so that information about service level could be stored in the sequence number field of the security protocol header **[Col. 3, lines 54-57]**.

8. Claim 7-9, 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Kitchin (USPN 7,260,392) in view of Zdan (USPN 7,020,143).

Regarding claims 7 and 14, Kitchin teaches a method as discussed in rejection of claim 3 and an apparatus as discussed in rejection claim 13.

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However, Kitchin does not teach at least one of the service levels corresponds to an Expedited Forwarding (EP) per hop behavior.

Zdan teaches at least one of the service levels corresponds to an EP behavior [Col. 5, lines 66-67 – Col. 6, line 1].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have at least one of the service level to correspond to an EP behavior since it's a currently defined standard PHB group [Col. 5, lines 66-67 – Col. 6, line 1].

Regarding claims 8 and 15, Kitchin teaches a method as discussed in rejection of claim 3 and an apparatus as discussed in rejection claim 13.

However, Kitchin does not teach at least one of the service levels corresponds to an Assured Forwarding (AF) per hop behavior.

Zdan teaches at least one of the service levels corresponds to an AF behavior [Col. 5, lines 66-67 – Col. 6, line 1].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have at least one of the service level to correspond to an AF behavior since it's a currently defined standard PHB group [Col. 5, lines 66-67 – Col. 6, line 1].

Regarding claims 9 and 16, Kitchin teaches a method as discussed in rejection of claim 3 and an apparatus as discussed in rejection claim 13.

However, Kitchin does not teach at least one of the service levels corresponds to a Best Efforts (BE) per hop behavior.

Zdan teaches at least one of the service levels corresponds to a BE behavior [Col. 5, lines 66-67 – Col. 6, line 1].

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to have at least one of the service level to correspond to a BE behavior since it's a currently defined standard PHB group [Col. 5, lines 66-67 – Col. 6, line 1].

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitchin (USPN 7,260,392) in view of Lahti et al. (US-PGPUB 2004/0008711, Herein as Lahti).

Regarding claim 12, Kitchin teaches a method as discussed in rejection of claim 1.

However, Kitchin does not teach discarding the received the packet if a match is performed in accordance with an IPsec anti-replay mechanism.

Lahti teaches discarding the received the packet if a match is performed in accordance with an IPsec anti-replay mechanism [Page 2, Paragraph 21].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to discard the received packet if a match is performed in accordance with an IPsec anti-replay mechanism to verify that duplicates of a data packet are not being received [Page 2, Paragraph 21].

10. Claim 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Kitchin (USPN 7,260,392) in view of Koodli et al. (USPN 7,000,120, Herein as Koodli).

Regarding claim 17, Kitchin teaches an apparatus as discussed in rejection of claim 17.

However, Kitchin does not teach the apparatus operates according to an IPsec protocol.

Koodli teaches that apparatus operates according to an IPsec protocol [Col. 4, lines 24-26].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the apparatus that operates according to an IPsec protocol since IPsec provides various security services for traffic at IP layer [Col. 1, lines 29-31].

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chandrahas Patel whose telephone number is 571-270-1211. The examiner can normally be reached on Monday through Thursday 7:30 to 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CBP


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SUPERVISORY PATENT EXAMINER